Fueling Your Boat

Proper fueling procedures are very important in preventing onboard fires. Gasoline vapors are heavier than air and can spread rapidly into enclosed spaces. You should check the bilges and all closed compartments for gasoline vapors. The sniff test is the most effective method for detecting fuel leaks.

The proper way to fuel your boat is as follows:

- Secure boat to the dock.
- Switch off engine(s).
- Extinguish all open flames.
- Do not use electrical switches.
- No smoking.
- Ports, hatches, and doors closed.
- Make certain all passengers are ashore.
- Determine quantity of fuel required and make sure it is the proper type of fuel.
- Hold hose nozzle firmly against fill pipe opening.
- Do not overfill.
- Wipe up all spillage.
- Open ports, hatches, and doors to ventilate.
- Turn blower on for four minutes minimum.
- Do the sniff test.
- Start engine(s).
- Re-board Passengers.
- Untie from dock and cast off.

Proper fueling techniques also keep our water clean and safe, and help marine life thrive in a healthier environment.

For portable tanks do the following:

- Tanks six gallons and smaller should be removed from the boat.
- Add appropriate amount of oil for 2-cycle outboards to fuel tank.
- Make sure hose nozzle is in contact with rim of tank.
- After filling, secure tank to the boat so it will not slide around while underway.

FUEL CONSERVATION TIPS

- Keep engine well tuned.
- Use the correct propeller and check for damage.
- Be sure engine is adequate for boat.
- Use proper oil mix in motor.
- Keep hull clean to reduce friction.
- Drain all water before leaving dock.
- Distribute weight evenly and don't overload.
- Shut off engine when at dock or at rest.
- Make fewer turns so as to not increase motor load.
- Plane smoothly and quickly at take off then throttle back to cruising speed.

FUELS AND THEIR FUMES

For many boaters, an enjoyable time on the water includes having all of the creature comforts that they are used to having at home such as hot water, heating and cooling, and a stove or grill. While having these items may make for a more enjoyable cruise, they must be handled much more carefully on a boat, and may operate

very differently from their shore side counterparts.

Hot water heaters, stoves, grills, air conditioners and heating systems all need fuel to operate. Types of fuel include electricity, alcohol, Compressed Natural Gas (CNG), Liquid Petroleum Gas (LPG-propane or butane), charcoal, kerosene, and diesel. Each fuel has specific characteristics, both pro and con, that you need to know before you use it for a particular piece of equipment.

Pros and Cons:

CNG-Compressed Natural Gas is natural gas liquefied under high pressure. (approx. 2250psi) CNG fumes can combine with oxygen to form a powerful explosive.

Though CNG fumes are lighter than air and will generally dissipate through open ports and hatches, care must be used with CNG appliances. Manufacturers include additives in CNG to make it smell strongly. Nothing beats a nose to sniff out gas fumes!

LPG - Liquefied petroleum gas is really two different gases that are generally classed together and are interchangeable. Propane and butane are both used in LPG appliances and have some advantages over CNG. LPG has a much higher heat output (21,000 BTUs/lb. for LPG vs. 9,000 BTUs/lb. for CNG) LPG also operates at lower pressures.

One thing to note, if you boat in cold weather, propane is preferable to butane, as butane has difficulty vaporizing in extremely cold weather and might not allow an appliance to work properly. One drawback to LPG is that fumes are heavier than air, and can build up to dangerous levels in bilge compartments. Even a small spark can signal the end of your boat!

Kerosene is also used on boats for heating, lighting, and to a lesser extent, cooking. Kerosene must be totally clean for it to work properly, and the whiter the kerosene the better. If you have yellow kerosene DO NOT use it in your burners, as it may clog your burner with carbon deposits.

Alcohol is used largely for stoves and is a relatively safe fuel. Denatured ethyl alcohol does not burn very hot- it may take quite some time to boil water on an alcohol stove. One of the best aspects of alcohol is that a flame can be put out with water. Like kerosene, alcohol must be clean for an appliance to work properly.

Electricity is probably the safest "fuel" that you can use on a boat. There are no explosive fumes, no pressurized fuel system that can develop dangerous leaks.

Electricity's main drawback is the large amount of current most appliances need to operate properly. Large current demands that many appliances need require boats to be hooked up to shore power or to have a generator.

All fuels must be properly stored on a boat. Safety devices such as fume sniffers should be considered for boats equipped with any gas system. Remember, gasoline should NEVER be used to fuel any on board appliance other than a generator or main engine. Gasoline is extremely volatile and its fumes are deadly.